

APPROVAL SHEET

Customer	
Part No.	F3507GM16B
Product type	Mode: TFT LCD Full Sheet <input checked="" type="checkbox"/> ODF <input type="checkbox"/> Injection
RoHS	<input type="checkbox"/> Non-compliance <input checked="" type="checkbox"/> Compliance
Remarks	
<input type="checkbox"/> Preliminary Specification <input type="checkbox"/> <input checked="" type="checkbox"/> Final Specification Signature by Customer : (PM)	

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Issued by	Checked by QA	Checked by PM	Approved By		
			QA	RD (Array & Cell)	RD (Loop)

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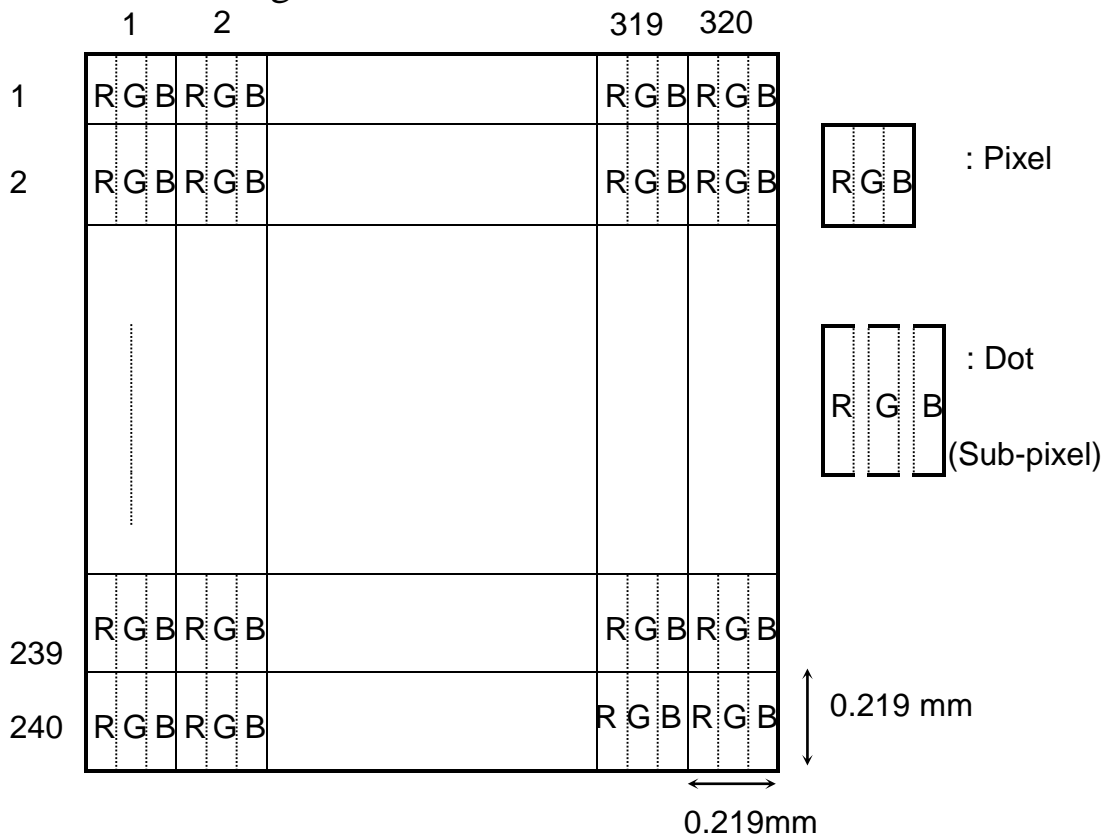
1.OVERVIEW

F3507GM16B is 3.5"color TFT-LCD (Thin Film Transistor Liquid Crystal Display) ODF cell. The 3.5" screen produces a high-resolution image that is composed of 320(H)*RGB*240(V) pixel elements in a stripe arrangement.

General specifications are summarized in the following table:

ITEM	SPECIFICATION
Panel Size	3.5inch
Display Area (mm)	70.08(W)*52.56(H)
CF glass dimension	75.0(W)*56.9(H)*0.5(t)
TFT glass dimension	75.0(W)*61.9(H)*0.5(t)
Number of Pixels	320(H)*RGB*240(V)
Pixel Pitch (mm)	0.073 x 0.219
Color Pixel Arrangement	RGB stripe
Display Mode	TN
Driving Method	TFT active matrix
Viewing Direction	6' clock(灰階反轉)
IC	HX8238D

LCD Cell Drawing



2.ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Values		Unit	Condition
		Min.	Max.		
Storage Temperature	Tst	-30	80	°C	T _A =25°C
Operation Temperature (Ambient Temperature)	Top	-20	70	°C	T _A =25°C
Humidity	-	-	90	%RH	T _A ≤60°C Without dewing

[Note 1]

The absolute maximum ratings are the values that must not be exceeded at any time for this product. It is not allowed for any of these ratings to be exceeded. Should a product be used with any of the absolute maximum ratings exceeded, the characteristics of the product may not be recovered, or in an extreme case, the product may be permanently destroyed.

Therefore, when designing a system incorporating the product, make sure that adequate attentions be paid to the variations in the supply voltages, the characteristics of parts that are connected, surges in the input and output lines, and the ambient temperatures.

[Note 2]

This specification applied after the driver IC mounting and the FPC mounting. **(The IC and FPC must have protective cover like Silicon or UV sealant etc.)** LCD should keep the condition that dew doesn't storage in case of driver IC un-mounting and FPC un-mounting. (Dew may break the LCD. Especially part is very weak for dew.)

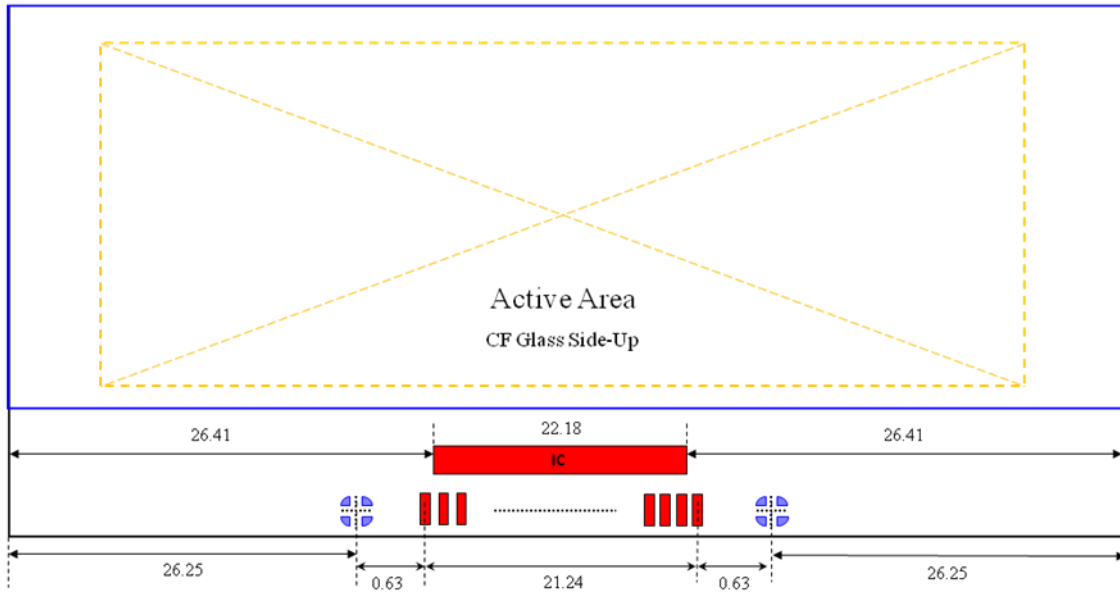
[Note 3]

The LCD Products listed on this document are not suitable for use of aerospace equipment, submarine cables, nuclear reactor control system and fire support systems. If customers intend to use these LCD products for above application or not listed in "Standard" as follows, please contact our sales people in advance.

3.2 IC & FPC Pad

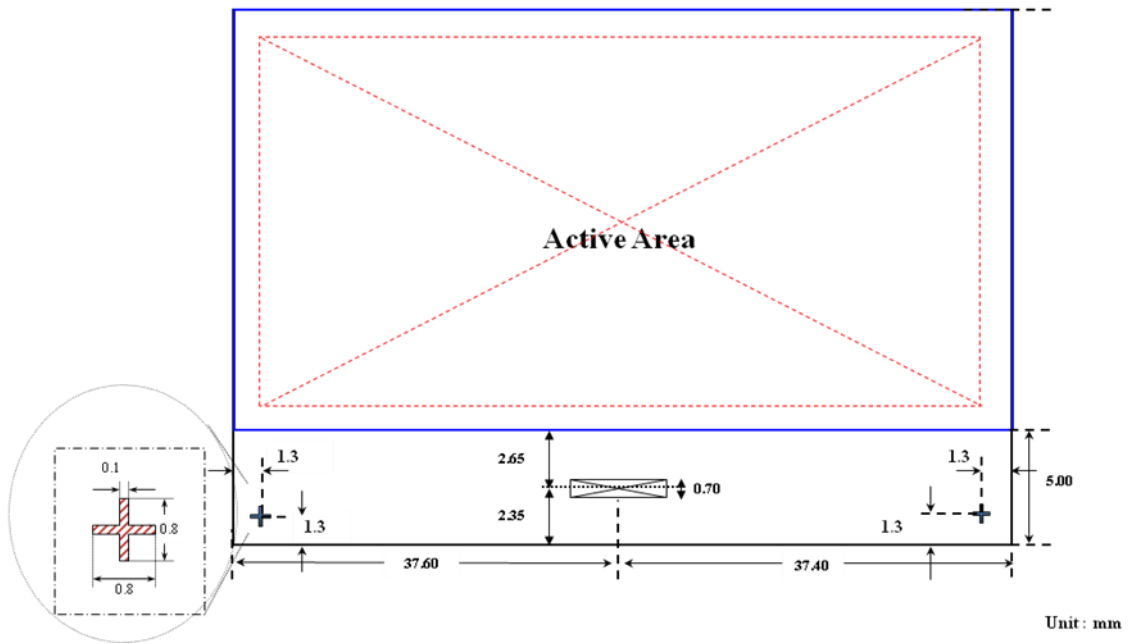
3.2.1 IC bonding area

IC : HX8238D



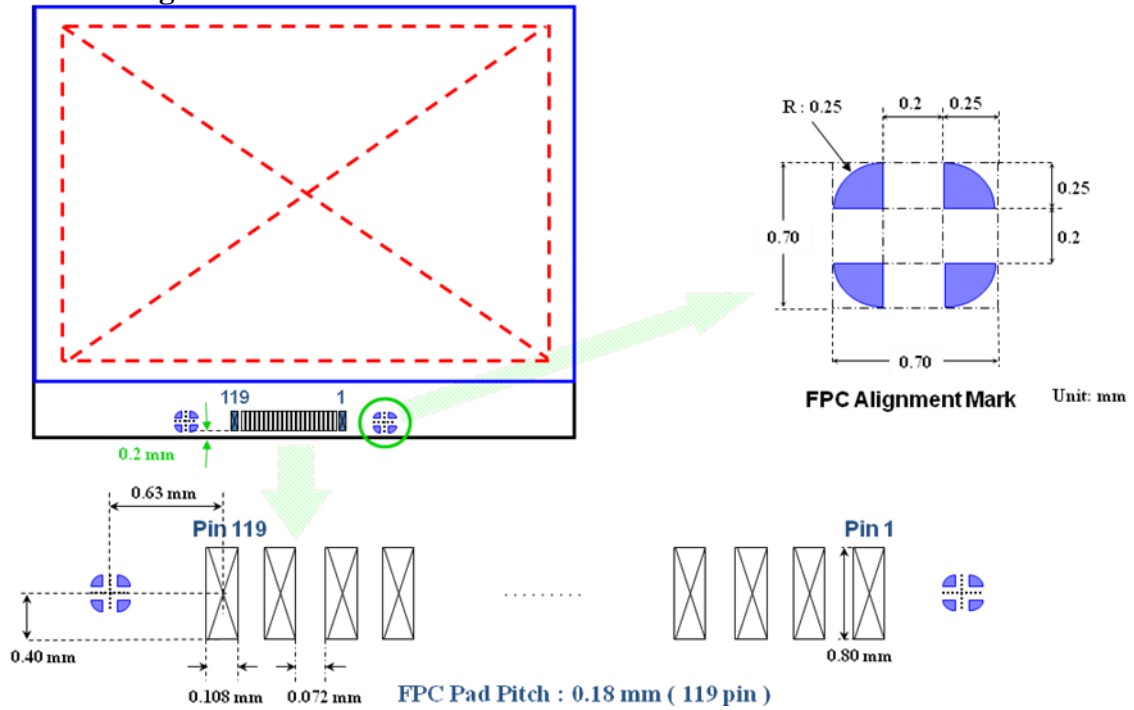
Unit : mm

IC : HX8238D

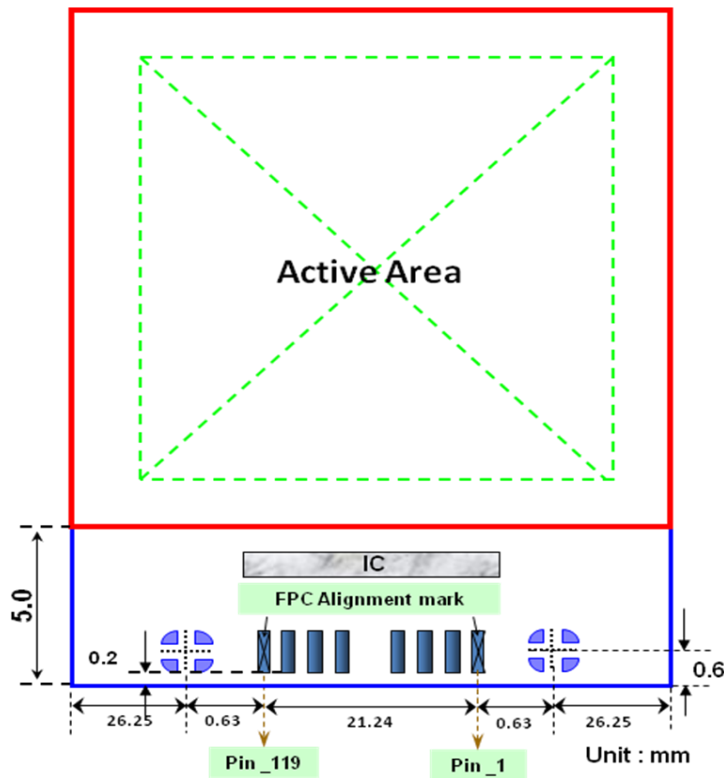


Unit : mm

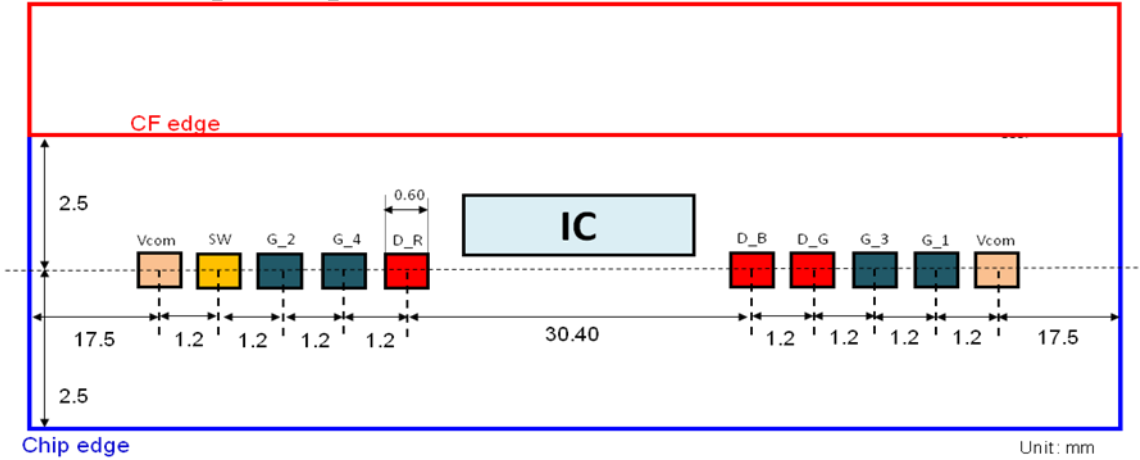
3.2.2 FPC bonding area



3.2.3 FPC Bonding Position



3.3 Panel check pad in panel

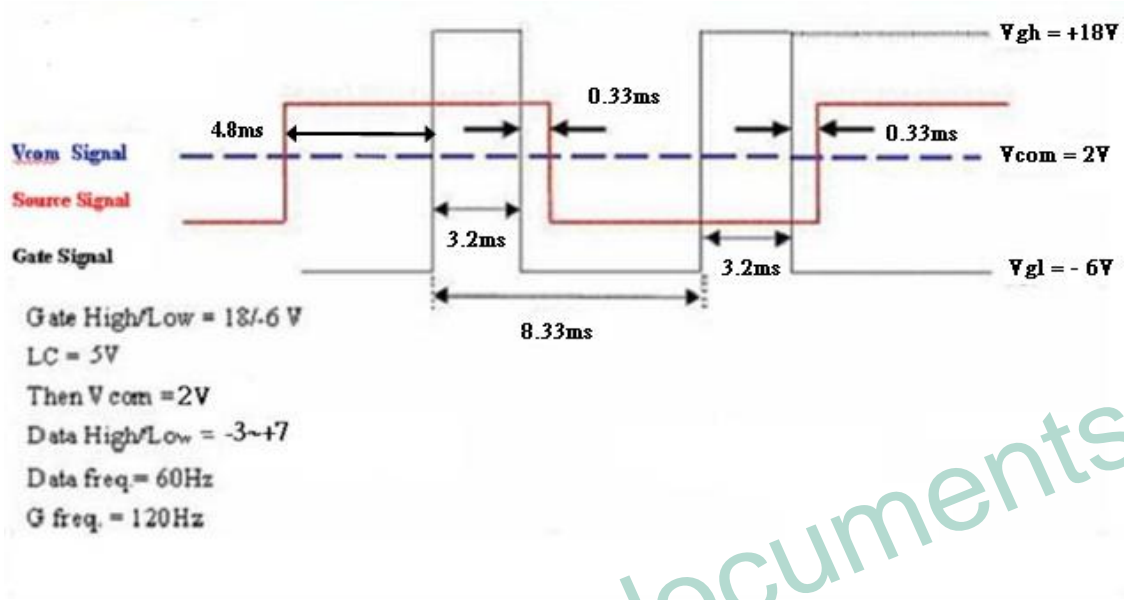


Cell light on 方式為 4 G、3 D、1 SW、2 Vcom。

藉由 4G 3D 的組合可呈現出 G_O、G_E、R、G、B 五個畫面。

Pad size : 0.6 mm x 0.6 mm / Pad pitch : 1.2 mm。

3.4 Panel check waveform



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3.5 FPC Pin Assignment

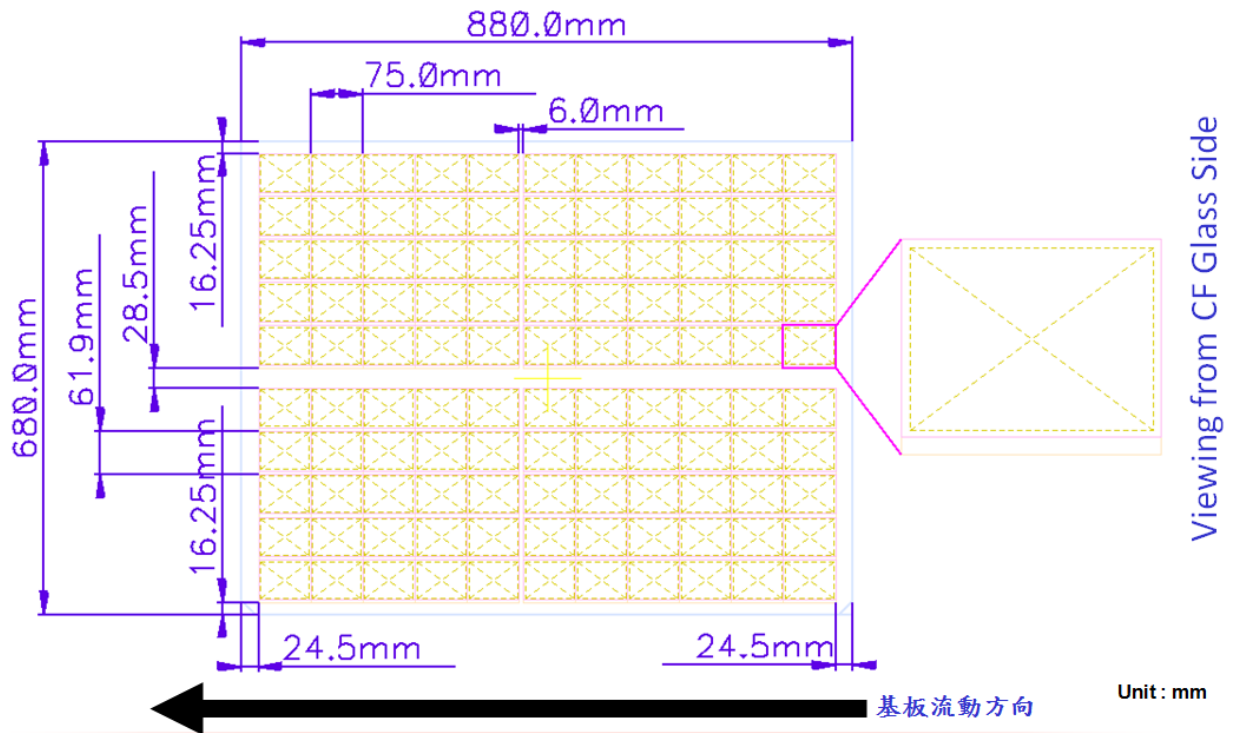
IC:HX8238D

HX8238B					
No.	Pin Name	No.	Pin Name	No.	Pin Name
1	DUMMY	41	RR2	81	VDDIO
2	AWVA_GND	42	RR3	82	VDDIO
3	FPC_R1	43	RR4	83	VCIP
4	FPC_R2	44	RR5	84	VCI
5	VCOM_FPC	45	RR6	85	VCI
6	VGL	46	RR7	86	VCI
7	VCOM_FPC	47	DEN	87	VDD
8	VCOM	48	HSYNC	88	VDD
9	VCOM	49	VSYNC	89	VDD
10	AVSS	50	DOTCLK	90	CN
11	AVSS	51	SHUT	91	CP
12	EXVR	52	TB	92	VGL
13	VSS	53	REGVDD	93	VGL
14	VSS	54	RL	94	C2N
15	SPSW	55	CM	95	C2P
16	QXH	56	SEL0	96	C3N
17	POL	57	SEL1	97	C3P
18	SDO	58	SEL2	98	VGH
19	RESB	59	CPE	99	VGH
20	CSB	60	PINV	100	VCOMR
21	SCK	61	VCIM	101	VCOML
22	SDI	62	VCIM	102	VCOML
23	BB0	63	C1P	103	VCOMH
24	BB1	64	C1P	104	VCOMH
25	BB2	65	C1N	105	VCOM
26	BB3	66	C1N	106	VCOM
27	BB4	67	VLCD63	107	VSSRC
28	BB5	68	VLCD63	108	VSSRC
29	BB6	69	VCIX2J	109	VCHS
30	BB7	70	VCIX2J	110	VCHS
31	GG0	71	VCIX2	111	VFB
32	GG1	72	VCIX2	112	DRV
33	GG2	73	CYN	113	VCOM_FPC
34	GG3	74	CYN	114	VGL
35	GG4	75	CYP	115	VCOM_FPC
36	GG5	76	CYP	116	FPC_L2
37	GG6	77	CXN	117	FPC_L1
38	GG7	78	CXN	118	AWVA_GND
39	RR0	79	CXP	119	DUMMY
40	RR1	80	CXP		

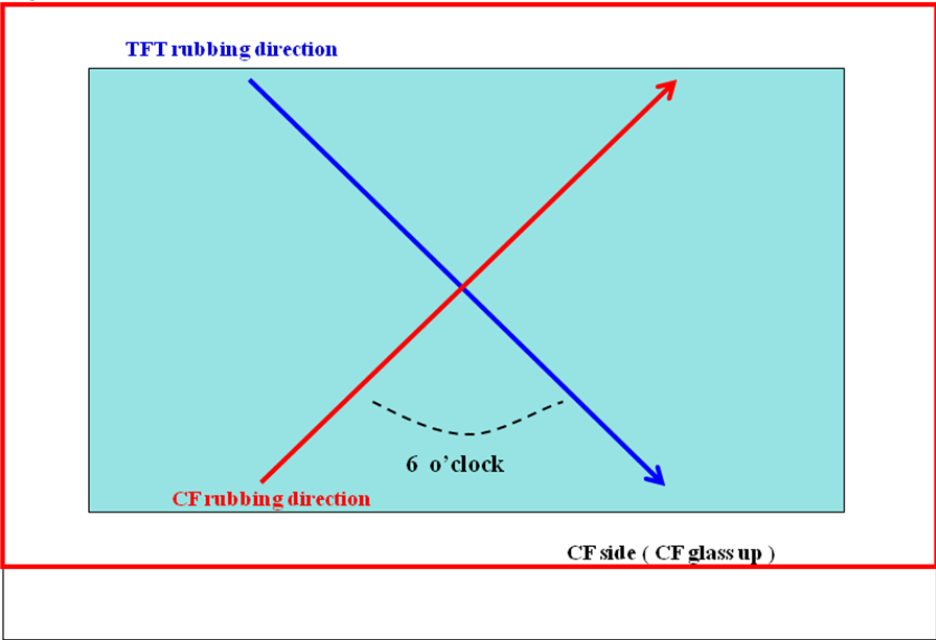
4.CELL PROCESS RULE

Item	Specification
Substrate size	880mm * 680mm
Cell gap	4.1±0.2um
Assembly precision	±5.6um

4.1 Cell Scribing Layout



4.2 Rubbing direction

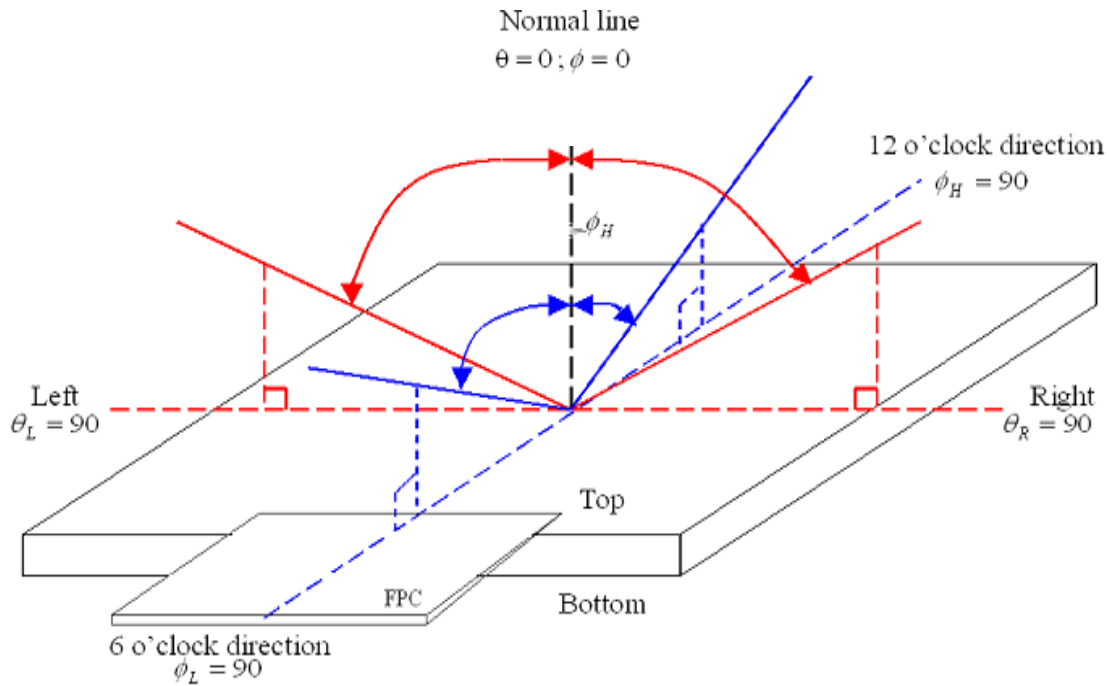


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5. OPTICAL SPECIFICATION

(Color Filter Chromaticity) :

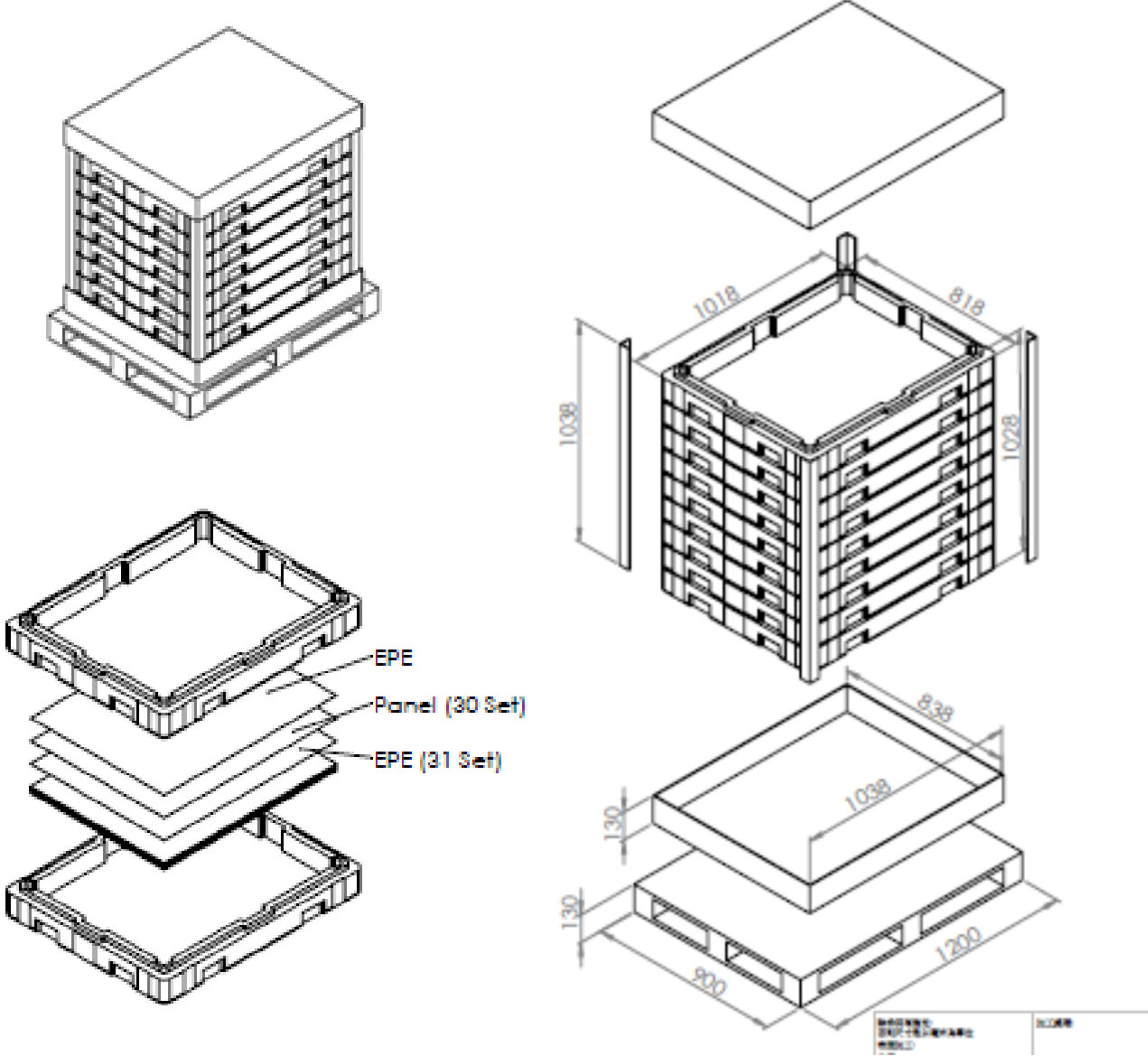
ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	
Color Filter Chromaticity	White	x	$\theta = \phi = 0^\circ$	0.307	0.309	0.311
		y		0.338	0.340	0.342
	Red	x	$\theta = \phi = 0^\circ$	0.651	0.653	0.655
		y		0.329	0.331	0.333
	Green	x	$\theta = \phi = 0^\circ$	0.313	0.315	0.317
		y		0.572	0.574	0.576
	Blue	x	$\theta = \phi = 0^\circ$	0.136	0.138	0.140
		y		0.131	0.133	0.135
	Gamut			60.7%		
	Measured by C light					
Transmittance		$\theta = \phi = 0^\circ$	5.6	6.0%		



6.HANDLING PRECAUTIONS FOR EMPTY CELL

Item	Min.	Max.	Unit	Remark
Storage Temperature	18	28	°C	
Storage Humidity	30	70	% (RH)	
Storage Time	—	1	month	

7.PACKAGE FORM



8. Reliability

Item	Test Conditions
High temperature storage test	80°C / 240 hrs / 3pcs
High temperature operation test	70°C / 240 hrs / 3pcs
Low temperature storage test	-30°C/ 240 hrs / 3pcs
Low temperature operation test	-20°C/ 240 hrs / 3pcs
High temp. , Humidity operation test	60°C , 90%RH , 240H / 3pcs
Thermal shock test	-30°C (1hr) ~ 80°C (1hr) / 100 Cycles(Non operation) / 3pcs

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